

(b) Amendments to the Claims

The following is a complete listing of the claims in this application, reflects all changes currently being made to the claims, and replaces all earlier versions and all earlier listings of the claims:

1.-5. (Cancelled).

6. (Currently Amended) A process for manufacturing an ink jet head comprising a discharge port for discharging an ink, an ink flow path communicated with said discharge port, and a substrate provided with an energy generating element for generating energy for discharging [[the]] ink from the discharge port, characterized in that the process comprises:

(1) a step of preparing a substrate provided with an energy generating element;

(2) a step of forming a photosensitive resin layer that can be dissolved and removed so as to cover said energy generating element on the surface of said substrate on which said energy generating element is provided;

(3) a step of patterning said photosensitive resin layer to form an ink flow path pattern;

(4) a step of forming a coating resin layer for forming the wall of the ink flow path on said ink flow path pattern;

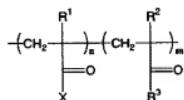
(5) a step of forming an ink discharge port in the coating resin layer located on the energy generating element; and

(6) a step of removing the ink flow path pattern to form the ink flow path communicated with said discharge port; and

the process employs a positive type photosensitive resin composition comprising at least a structural unit represented by the following general formula (1):

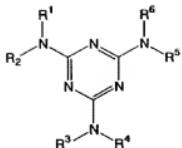
providing, a precursor comprising a first photosensitive resin layer laminated to a second photosensitive resin layer on said substrate, the second photosensitive resin layer including a composition comprising (a) a polyacrylate resin having structural unit represented by the following general formula (1), wherein the first photosensitive resin layer is positioned on the side of the substrate

General general formula (1)



wherein, X represents a hydroxyl group, an alkoxylof group having 2 to 4 carbon atoms; or a methylolamino group; R¹ and R² independently represents represent a hydrogen atom, or an alkyl group having 1 to 3 carbon atoms; R³ represents an alkyl group having 1 to 3 carbon atoms, an alkoxy group having 1 to 3 carbon atoms, or an aralkyl group having an aryl group or alkyl group with 1 to 2 carbon atoms; n represents a positive integer; and m represents 0 or a positive integer, and (b) a condensable crosslinker compound represented by the following general formula (2)[[:]]

General general formula (2)



Wherein wherein R¹ to R⁶ independently represents a hydrogen atom, a methylol group, or an alkoxy methyl group to which an alkoxy group having 1 to 4 carbon atoms is bonded; provided that, at least two of R¹ to R⁶ represent methylol groups, or alkoxy methyl groups to which an alkoxy group having 1 to 4 carbon atoms is bonded;

patterning, by a photolithographic process, said second photosensitive resin layer to form a second ink flow path pattern which has a shape of a portion of the ink flow path;

patterning said first photosensitive resin layer to form a first ink flow path pattern which has a shape of another portion of the ink flow path;

providing a coating resin layer for forming the wall of the ink flow path on said first ink flow path pattern and the second flow path pattern;

forming an ink discharge port in the coating resin layer; and

removing the first ink flow path pattern and the second ink flow path pattern to form the ink flow path.

7. (Original) The process for manufacturing an ink jet head according to claim 6 characterized in that said positive type photosensitive resin composition further comprises a photoacid generator.

8. (Original) The process for manufacturing an ink jet head according to claim 7 characterized in that the photoacid generator is at least one selected from the group consisting of aromatic sulfonium salts, aromatic iodonium salts and triazine compounds.

9.-11. (Cancelled).

12. (Original) The process for manufacturing an ink jet head according to claim 6, wherein the coating resin contains a curable epoxy compound.

13. (Original) The process for manufacturing an ink jet head according to claim 6, wherein the coating resin contains a cationic photopolymerization initiator.

14.-17. (Cancelled).

18. (Currently Amended) A process for manufacturing an ink jet head comprising a discharge port for discharging an ink, an ink flow path communicated with said discharge port, and an energy generating element for generating energy for discharging the ink, characterized in that the process comprises:

preparing a substrate provided with an energy generating element;

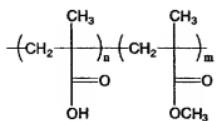
forming a first layer on the substrate;

forming a second layer on the first layer,

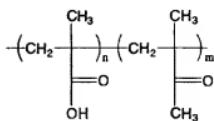
wherein the second resin layer comprises

a plurality of first compounds, the first compound having one selected from following structural units[[:]]

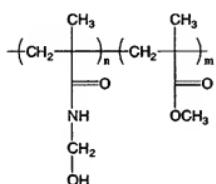
Unit 1



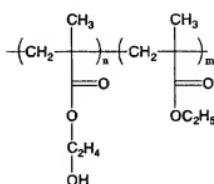
Unit 2



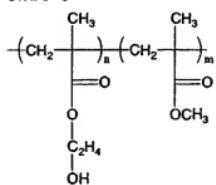
Unit 3



Unit 4

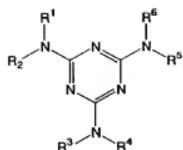


Unit 5



wherein m and n represent positive integers, and a compound represented by the following general formula (2)[[:]]

General general formula (2)



wherein R¹ to R⁶ independently represents a hydrogen atom, a methylol group, or an alkoxyethyl group to which an alkoxy group having 1 to 4 carbon atoms is bonded; provided that, at least two of R¹ to R⁶ represent methylol groups, or alkoxyethyl groups to which an alkoxy group having 1 to 4 carbon atoms is bonded;

heating the second layer so as to crosslink the plurality of the first compounds each other;

patterning said second layer to form an ink flow path pattern;

patterning said first layer to form an ink flow path pattern;

forming a coating resin layer for forming the wall of the ink flow path, by solvent coating, on said ink flow path pattern;

forming an ink discharge port in the coating resin layer; and

removing the ink flow path pattern to form the ink flow path.

19. (Previously Presented) The process for manufacturing an ink jet head according to claim 18, characterized in that said second layer comprises a photoacid generator, and patterning said second layer is performed by irradiating light to said second layer.

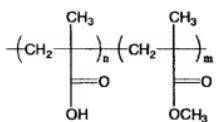
20. (Previously Presented) The process for manufacturing an ink jet head according to claim 19, characterized in that when said second layer is patterned, said crosslinked portions are decomposed by an acid generated in a reaction of said photoacid generator by irradiating said light to said second layer.

21.-23. (Cancelled).

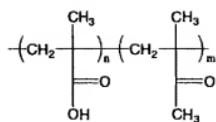
24. (New) A process according to claim 6, wherein the first photosensitive resin is polymethyl isopropenyl ketone.

25. (New) A process according to claim 6, wherein the polyacrylate resin having structural unit represented by the following general formula (1) is one selected from following structural units

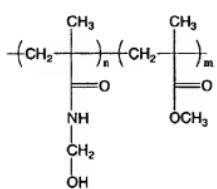
Unit 1



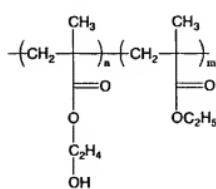
Unit 2



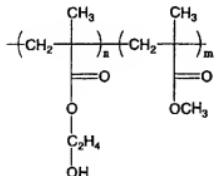
Unit 3



Unit 4



Unit 5



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